

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) An apparatus comprising:

a voltage regulator converter, the voltage regulator converter comprising N ($N > 1$) phases;
and

a voltage regulator controller coupled to the voltage regulator converter and to control a first one of the N phases of the voltage regulator converter to ~~generate output~~ a first current within a first one of the N phases and to control a second one of the N phases to ~~generate output~~ a second current ~~within a second one of the N phases,~~

wherein the first output current is different from the second output current.

2. (original) An apparatus according to Claim 1, further comprising:

N feedback circuits, each of the N feedback circuits coupled to the voltage regulator controller and to one of the N phases, wherein one or more electrical elements of one of the N feedback circuits exhibits an electrical value that is different from an electrical value exhibited by a corresponding one or more electrical elements of another one of the N feedback circuits.

3. (original) An apparatus according to Claim 2, wherein the one or more electrical elements of the one of the N feedback circuits comprises a first resistor, wherein the one or more electrical elements of the another one of the N feedback circuits comprises a second resistor, and wherein a resistance value associated with the first resistor is different from a resistance value associated with the second resistor.

4. (original) An apparatus according to Claim 3, wherein the first resistor and the second resistor comprise current-sensing resistors.

5. (original) An apparatus according to Claim 1, further comprising:

N feedback circuits, each of the N feedback circuits coupled to the voltage regulator controller and to one of the N phases,

wherein the voltage regulator controller is to sense a first sensed current value from a first of the N feedback circuits coupled to the first one of the N phases in response to the first current,

wherein the voltage regulator controller is to sense a second sensed current value from a second of the N feedback circuits coupled to the second one of the N phases in response to the second current, and

wherein the first sensed current value and the second sensed current value are substantially identical.

6. (original) An apparatus according to Claim 5,

wherein the first of the N feedback circuits comprises a first current sensing resistor,

wherein the second of the N feedback circuits comprises a second current sensing resistor, and

wherein a resistance value associated with the first current sensing resistor is different from a resistance value associated with the second current sensing resistor.

7. (original) An apparatus according to Claim 5, wherein the first one of the N phases is located in a more thermally-sensitive area than the second one of the N phases, and wherein the first current is less than the second current.

8. (cancelled)

9. (original) An apparatus according to Claim 1, wherein the first one of the N phases is located in a more thermally-sensitive area than the second one of the N phases, and wherein the first current is less than the second current.

10. (currently amended) A method comprising:

~~sensing a first current from a first feedback circuit coupled to a first phase of a voltage regulator converter;~~

~~sensing a second current from a second feedback circuit coupled to a second phase of the voltage regulator converter; and~~

controlling a first one of N phases of a voltage regulator converter to output a first current; and

controlling a second one of the N phases to output a second current~~the voltage regulator converter to generate a third current within the first phase and to generate a fourth current within the second phase,~~

wherein the first first output current is different from~~substantially identical to the second output current; and~~

~~wherein the third current is different from the fourth current.~~

11. (currently amended) A method according to Claim 10, further comprising:

~~wherein sensing the first current comprises:~~

sensing a first third current from a first current sensing resistor of a first feedback circuit coupled to the first one of the N phases; and

~~wherein sensing the second current comprises:~~

sensing a second fourth current from a second current sensing resistor of a second feedback circuit coupled to the second one of the N phases,

wherein the third current is substantially identical to the fourth current.

12. (original) A method according to Claim 11,

wherein a resistance value associated with the first current sensing resistor is different from a resistance value associated with the second current sensing resistor.

13. (currently amended) A method according to Claim 10, wherein the first phase is located in a more thermally-sensitive area than the second phase, and wherein the ~~third~~first current is less than the ~~fourth~~second current.

14. (cancelled)

15. (currently amended) A system comprising:

a microprocessor;

a double data rate memory coupled to the microprocessor; and

a voltage regulator to provide a voltage to the microprocessor, the voltage regulator comprising:

a voltage regulator converter, the voltage regulator converter comprising N ($N > 1$) phases; and

a voltage regulator controller coupled to the voltage regulator converter and to control a first one of the N phases of the voltage regulator converter to generate output a first current ~~within a first one of the N phases and to control a second one of the N phases to generate output a second current within a second one of the N phases~~, wherein the first output current is different from the second output current.

16. (original) A system according to Claim 15, further comprising:

N feedback circuits, each of the N feedback circuits coupled to the voltage regulator controller and to one of the N phases, wherein one or more electrical elements of one of the N

feedback circuits exhibits an electrical value that is different from an electrical value exhibited by a corresponding one or more electrical elements of another one of the N feedback circuits.

17. (original) A system according to Claim 16, wherein the one or more electrical elements of the one of the N feedback circuits comprises a first resistor, wherein the one or more electrical elements of the another one of the N feedback circuits comprises a second resistor, and wherein a resistance value associated with the first resistor is different from a resistance value associated with the second resistor.

18. (original) A system according to Claim 15, further comprising:

N feedback circuits, each of the N feedback circuits coupled to the voltage regulator controller and to one of the N phases,

wherein the voltage regulator controller is to sense a first sensed current value from a first of the N feedback circuits coupled to the first one of the N phases in response to the first current,

wherein the voltage regulator controller is to sense a second sensed current value from a second of the N feedback circuits coupled to the second one of the N phases in response to the second current, and

wherein the first sensed current value and the second sensed current value are substantially identical.

19. (original) A system according to Claim 18,

wherein the first of the N feedback circuits comprises a first current sensing resistor,

wherein the second of the N feedback circuits comprises a second current sensing resistor, and

wherein a resistance value associated with the first current sensing resistor is different from a resistance value associated with the second current sensing resistor.

20. (cancelled)

21. A system according to Claim 15, further comprising:

a motherboard coupled to the microprocessor and to the voltage regulator,

wherein the first one of the N phases is located in a more thermally-sensitive area of the motherboard than the second one of the N phases, and wherein the first current is less than the second current.